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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,393	01/16/2004	Adam W. Divelbiss		6687

26665 7590 08/11/2006

REVEO, INC.
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EXAMINER	
NGUYEN, PHU K	
ART UNIT	**PAPER NUMBER**
2628	

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Applicati n N .	Applicant(s)
	10/759,393	DIVELBISS ET AL.
	Examiner	Art Unit
	Phu K. Nguyen	2628

-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndence address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 30 May 2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Phu Nguyen

PHU K. NGUYEN
PRIMARY EXAMINER
GROUP 2300

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over MATSUI et al. (6,704,042) in view of NELSON et al. (A Heterogeneous Architecture for Stereoscopic Visualization) .

As per claim 1, Matsui teaches the claimed "stereoscopic format conversion system" comprising: "a plurality of front end processing systems" (Matsui, a plurality of cameras connected to the network – column 4, lines 25-30); "a 3D data formatter for performing real-time conversion of one of a plurality of input 3D formats to one of a plurality of output 3D formats" (Matsui, the conversion of the received format to the displayed format for any of a plurality display devices - column 8, lines 29-46); "a plurality of back-end processors" (Matsui, the plurality of stereoscopic display processing units connected to the network – column 13, lines 15-20); and "a control system" (Matsui, the server for controlling the formatted stereoscopic data communication or the processors for controlling the format conversion – column 7, lines 11-28). It is noted that Matsui does not teach "said 3D data formatter including at least two separate video processing units." However, the use of multiprocessors or parallel processors or pipeline stages to increase the processing speed of rendering the stereoscopic images is taught by Nelson (page 353, the slave processors 3 and 4 in

Figure 7 are used for processing left and right images of the stereoscopic images). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

Claim 7 adds into claim 1 the input and output formats <u>may be</u> (or <u>may not be</u> - emphasis added) independently selected from a group of formats which is only an alternative choice of a type of format (Matsui, column 8, lines 39-46; the standard formats for display devices).

Claim 11 adds into claim 1 one processor for the left eye data and another for the right eye data which Matsui does not teach. However, Nelson teaches such concept in the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images. It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

Claim 15 adds into claim 1 "one processor is for processing video data of one output 3D formats or video formats and another is for processing video data of one output 3D formats or video formats" which Matsui does not teach. However, Nelson teaches such concept in the Shiva+Para T Configuration for Stereoscopic Visualization

of combined slave processors 1-4 (page 353). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

As per claim 2, Matsui teaches the claimed "method of performing stereoscopic format conversion" comprising: "inputting a 3D data stream from one or more of a plurality of 3D formats" (Matsui, a plurality of cameras connected to the network – column 4, lines 25-30); "processing said 3D data; performing real time 3D data format conversion to produce format converted data" (Matsui, the conversion of the received format to the displayed format for any of a plurality display devices - column 8, lines 29-46); "processing said format converted data for outputting to produce a converted 3D data stream; and outputting converted 3D data stream" (Matsui, the plurality of stereoscopic display processing units connected to the network – col. 13, lines 15-20). It is noted that Matsui does not teach "said 3D data formatter including at least two separate video processing units." However, the use of multiprocessors or parallel processors or pipeline stages to increase the processing speed of rendering the stereoscopic images is taught by Nelson (page 353, the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a

combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

Claim 8 adds into claim 2 the input and output formats may be (or may not be - emphasis added) independently selected from a group of formats which is only an alternative choice of a type of format (Matsui, column 8, lines 39-46; the standard formats for display devices).

Claim 12 adds into claim 2 one processor for the left eye data and another for the right eye data which Matsui does not teach. However, Nelson teaches such concept in the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images. It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

Claim 16 adds into claim 2 "one processor is for processing video data of one output 3D formats or video formats and another is for processing video data of one output 3D formats or video formats" which Matsui does not teach. However, Nelson teaches such concept in the Shiva+Para T Configuration for Stereoscopic Visualization of combined slave processors 1-4 (page 353). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in

processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

As per claim 3, Matsui teaches the claimed "stereoscopic format conversion system" comprising: "a front end processing system and a front end expansion port" (Matsui, a plurality of cameras connected to the network – column 4, lines 25-30); "a 3D data formatter for performing real-time conversion of one of a plurality of input 3D formats to one of a plurality of output 3D formats" (Matsui, the conversion of the received format to the displayed format for any of a plurality display devices - column 8, lines 29-46); "a back-end processor and a back end expansion port" (Matsui, the plurality of stereoscopic display processing units connected to the network – column 13, lines 15-20); and "a control system" (Matsui, the server for controlling the formatted stereoscopic data communication or the processors for controlling the format conversion – column 7, lines 11-28). It is noted that Matsui does not teach "said 3D data formatter including at least two separate video processing units." However, the use of multiprocessors or parallel processors or pipeline stages to increase the processing speed of rendering the stereoscopic images is taught by Nelson (page 353, the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page

354, lines 10-13).

Claim 9 adds into claim 3 the input and output formats may be (or may not be - emphasis added) independently selected from a group of formats which is only an alternative choice of a type of format (Matsui, column 8, lines 39-46; the standard formats for display devices).

Claim 13 adds into claim 3 one processor for the left eye data and another for the right eye data which Matsui does not teach. However, Nelson teaches such concept in the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images. It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

Claim 17 adds into claim 3 "one processor is for processing video data of one output 3D formats or video formats and another is for processing video data of one output 3D formats or video formats" which Matsui does not teach. However, Nelson teaches such concept in the Shiva+Para T Configuration for Stereoscopic Visualization of combined slave processors 1-4 (page 353). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in

processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

As per claim 4, Matsui teaches the claimed "method of performing stereoscopic format conversion" comprising: "inputting a 3D data stream from a plurality of 3D formats; processing said 3D data stream at a front end processor or a processor added to a front end expansion port" (Matsui, a plurality of cameras connected to the network – column 4, lines 25-30); "performing real time 3D data format conversion to produce format converted data; processing said format converted data to produce a converted 3D data stream for outputting at a back end processor or a processor added to a back end expansion port" (Matsui, the conversion of the received format to the displayed format for any of a plurality display devices - column 8, lines 29-46); "outputting converted 3D data stream, wherein said stereoscopic format conversion method performs conversion of a plurality of 3D formats to any one of said plurality of said 3D formats" (Matsui, the plurality of stereoscopic display processing units connected to the network – column 13, lines 15-20). It is noted that Matsui does not teach "said 3D data formatter including at least two separate video processing units." However, the use of multiprocessors or parallel processors or pipeline stages to increase the processing speed of rendering the stereoscopic images is taught by Nelson (page 353, the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images). It would have been obvious to use multiprocessors to replace of

a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

As per claim 5, Matsui teaches the claimed "stereoscopic format conversion system" comprising: "a front end processing system" (Matsui, a plurality of cameras connected to the network – column 4, lines 25-30); "a 3D data formatter for performing real-time conversion of one of a plurality of input 3D formats to one of a plurality of output 3D formats" (Matsui, the conversion of the received format to the displayed format for any of a plurality display devices - column 8, lines 29-46); "a back-end processor" (Matsui, the plurality of stereoscopic display processing units connected to the network – column 13, lines 15-20); and "a control system" (Matsui, the server for controlling the formatted stereoscopic data communication or the processors for controlling the format conversion – column 7, lines 11-28); "wherein the 3D data formatter converts stereoscopic video and performs a real time function selected from the group consisting of stereoscopic image pan, alignment, crop, zoom, keystone correction, aspect ratio conversion, linear scaling, non-linear scaling, scan-rate conversion, and any combination comprising at least one of the foregoing functions" (Matsui, the stereoscopic image lightness correction processing – col. 12, lines 50-53). It is noted that Matsui does not teach "said 3D data formatter including at least two

separate video processing units." However, the use of multiprocessors or parallel processors or pipeline stages to increase the processing speed of rendering the stereoscopic images is taught by Nelson (page 353, the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

Claim 10 adds into claim 5 the input and output formats <u>may be</u> (or <u>may not be</u> - emphasis added) independently selected from a group of formats which is only an alternative choice of a type of format (Matsui, column 8, lines 39-46; the standard formats for display devices).

Claim 14 adds into claim 5 one processor for the left eye data and another for the right eye data which Matsui does not teach. However, Nelson teaches such concept in the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images. It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

Claim 18 adds into claim 5 “one processor is for processing video data of one output 3D formats or video formats and another is for processing video data of one output 3D formats or video formats” which Matsui does not teach. However, Nelson teaches such concept in the Shiva+Para T Configuration for Stereoscopic Visualization of combined slave processors 1-4 (page 353). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor’s capacities (Nelson, Abstract, or page 354, lines 10-13).

As per claim 6, Matsui teaches the claimed “a front end processing system for processing from one or more of plural 3D input formats” (Matsui, a plurality of cameras connected to the network – column 4, lines 25-30); “a 3D data formatter for performing real-time conversion of one of a plurality of input 3D formats to one of a plurality of output 3D formats” (Matsui, the conversion of the received format to the displayed format for any of a plurality display devices - column 8, lines 29-46); “a back-end processor for processing to one or more of plural 3D output formats” (Matsui, the plurality of stereoscopic display processing units connected to the network – column 13, lines 15-20); and “a control system” (Matsui, the server for controlling the formatted stereoscopic data communication or the processors for controlling the format conversion – column 7, lines 11-28); “wherein the one or more 3D input formats and the one or more 3D output formats may be independently selected from the group of

formats consisting of standard 2D; dual-channel; field-sequential; frame-sequential (page-flipped); over-under; row-interleaved; side-by-side; column-interleaved, spectrally multiplexed, and combinations comprising at least one of the foregoing formats" (Matsui, the input formats are from different types of cameras – column 5, lines 29-37; and the output or display format is selected for different types of display devices – column 8, lines 39-46). It is noted that Matsui does not teach "said 3D data formatter including at least two separate video processing units." However, the use of multiprocessors or parallel processors or pipeline stages to increase the processing speed of rendering the stereoscopic images is taught by Nelson (page 353, the slave processors 3 and 4 in Figure 7 are used for processing left and right images of the stereoscopic images). It would have been obvious to use multiprocessors to replace of a single processor because it provides the improvement in processing speed or throughput through a combination of processor's capacities (Nelson, Abstract, or page 354, lines 10-13).

Claims 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In these claims, "video data of one output 3D formats or video formats" (line 4) is unclear as to its proper antecedent basis as whether it indicates "video data of one output 3D formats or video formats" (lines 2-3).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu K. Nguyen whose telephone number is (571) 272 7645. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (571) 272 7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phu K. Nguyen
August 5, 2006

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